

ABSTRACT

An apparatus includes a vessel 10 for storing a liquid mixture 11 containing a liquid fuel 2 and an incompatible liquid 4 such as water or for
5 allowing the liquid mixture 11 to flow therethrough, a vibrator 13 having at least one portion making contact with the liquid mixture in the vessel, a vibration generator 20 for vibrating the vibrator at high frequency, and a reflector 14 spaced from the vibrator 13 at a small distance. The incompatible liquid 4 is dispersed in and mixed with the fuel 2 by vibrating
10 the vibrator at high frequency, whereby an emulsion fuel 12 having an ultra fine particle size and high mixture density is produced. According to the above configuration, cavitation can be extremely efficiently generated. The following technique is disclosed: a technique for producing various types of liquid mixture having an ultra fine particle size using the cavitation
15 efficiently. In particular, the following mixture can be produced in a short time with high efficiency: a liquid mixture, such as an emulsion fuel, a liquid industrial material, a food product, a cosmetic product, or a drug product, having an ultra fine particle size, high mixture density, and high quality. If the liquid mixture is stored over a long period of time, liquid
20 components thereof are hardly separated from each other.